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Brief Overview

Occupational health indicators (OHIs) provide a snapshot of the health of workers in New Jersey (NJ). These indicators can be used by public health officials to track work-related adverse health effects and their causes.

Major Accomplishments/ Outcomes

NJDOH Office of Emergency Medical Services

In an ongoing effort to identify novel data sources for occupational health surveillance, the OHS Unit, with the assistance of a CSTE fellow, collaborated with the NJDOH Office of Emergency Medical Services (EMS) to evaluate the usefulness of their database. Using FRIL, an open-source program, EMS data were linked to HD and ED data by patient name, date of birth, gender, and date of admission. The results showed that EMS data can supplement current estimates of nonfatal work-related injuries and illnesses. A poster, "Linking Emergency Medical Services Data to Hospital and Emergency Department Discharge Data for the Surveillance of Work-Related Injuries in New Jersey, 2011," was presented at the 2013 CSTE Annual Conference, in Pasadena, CA.

NIOSH

New Jersey has also joined other occupational health surveillance states in an effort to add the NIOSH Industry and Occupation (I/O) module into the NJ Behavioral Risk Factor Surveillance System (BRFSS) questionnaire. NJ's PI was invited to join the NJ BRFSS Committee and is collaborating with the state BRFSS project coordinator to incorporate the I/O module into the 2013 questionnaire. Industry and Occupational data collected during the 2012 NJ BRFSS questionnaire is currently in the process of being coded by NIOSH.

In April 2013, The PI attended the "Counting Work-related Injuries and Illnesses: Taking Steps to Close the Gaps" meeting in Washington, DC. This meeting addressed the current state of occupational injury and illness surveillance in the United States. Participants reviewed the latest knowledge and advances made since the previous meeting (2009), and updated the recommendations addressing gaps in surveillance of work-related injuries and illnesses at both the national and state level.

CSTE Occupational Health Subcommittee

This Subcommittee has been given the mission to develop a guidance document and a Web page to showcase success stories from states involved in occupational health and safety surveillance. OHS Unit staff was designated to design the Success Stories Web page including a template for the individual stories. Staff participated in conference calls to finalize the various outputs. The final draft of the Web page was submitted to CSTE for programming. A success story document on the NJDOH adult school crossing guards outreach was submitted and accepted. To date, the Subcommittee has received a total of 10 state-based success stories.

Northeast States

OHS Unit staff attended the 2013 Northeast Regional Occupational Disease and Injury Surveillance Conference in Chester, CT, attended by 40 representatives from NIOSH, Yale University, UConn Health Center, UMass Lowell, and five surveillance states (CT, MA, NH, NJ, NY, including NYC and the NY Center

for Agricultural Medicine). Staff made presentations on NJ's occupational surveillance activities during the previous year, NJ's experience during and in the aftermath of Hurricane Sandy and on the NJDOH, CDC, ATSDR and NIOSH collaborative effort to assess the occupational health and safety of emergency personnel who responded to the vinyl chloride release from a train derailment.

Major Outputs/Products

NJ SHAD (State Health Assessment Data) System

The OHS Unit was successful in incorporating five additional OHIs into the NJ Department of Health (NJDOH) online indicator-based information system, NJ State Health Assessment Data (NJ SHAD). This allows for increased visibility and integration into mainstream public health as the OHIs are now featured with all the leading NJ health indicators. These OHIs are compiled in a new "Occupational Health and Safety" folder along with two previously posted OHIs "Fatal Work-Related Injuries (OHI #3)" and "Elevated Blood Lead Levels among Adults (OHI #13)" for a total of seven OHIs [<http://www4.state.nj.us/dhss-shad/indicator/introduction.html>]. The newly added OHIs include: Non-fatal Work-related Injuries and Illnesses Reported by Employers (OHI #1); Work-related Hospitalizations (OHI #2); Hospitalizations for Work-related Burns (OHI #6); Hospitalizations from or with Pneumoconiosis (OHI #9); and Mortality from or with Pneumoconiosis (OHI #10). Each OHI profile includes data from 2000-2008. This information will be updated annually. Links to related indicators are also provided. For example, the "Adult Lead Exposure" indicator page features links to the "Children under 3 Years of Age with a Confirmed Elevated Blood Lead Level" and "Childhood Lead Testing Coverage."

NJDOH Occupational Health Indicators Web Page

Another major accomplishment was the creation of a new OHI webpage [http://nj.gov/health/surv/nj_ohi.shtml] featuring the complete set of NJ OHIs. For this purpose, staff has written narratives and completed trend analyses for all 18 OHIs from 2000-2008 including employment demographics. This information will be updated annually. This is a major step in providing stakeholders and the public with quick access to comprehensive NJ occupational health and safety statistics. Links to related topics are also featured on the page.

Healthy New Jersey 2020

Three OHIs, namely, "Fatal Work-Related Injuries (OHI #3)," "Mortality from or with Pneumoconiosis (OHI #10)," and "Elevated Blood Lead Levels among Adults (OHI #13)" were incorporated into the Healthy New Jersey 2020 as Occupational Health and Safety objectives and referenced accordingly in the NJDOH SHAD indicator system.

OHI Multi-State Report

The OHS Unit submitted all OHIs for 2009 to NIOSH including a new OHI #20, Hospitalizations for Work-Related Back Disorders for incorporation into their multi-state OHI report posted on the CSTE Web site. Examples of NJ OHIs are provided in Tables 1 and 2 below. Rates of asbestosis hospitalizations in NJ (214.0 hospitalizations per million residents) continue to be higher than the US (48.0 hospitalizations per million residents) rates. Asbestosis also resulted in the greatest number of deaths from or with pneumoconiosis, over 600 from 2000-2009. Rates of asbestosis in NJ may be higher because the production of asbestos products and use of asbestos, especially in New Jersey's many shipyards, were extensive in the state. Staff is currently working with a graduate student from the University of Medicine and Dentistry of New Jersey's School of

Public Health to further describe the incidence and mortality rates of asbestosis, and identify areas/counties in NJ that are especially burdened by the disease.

Most of the 2010 OHIs have been submitted to NIOSH. Data are not yet available for OHI #10 (Mortality from or with Pneumoconiosis) and OHI #12 (Incident of Malignant Mesothelioma). OHS Unit staff is collaborating with NIOSH to explore, pilot test, and develop guidance for temporal/trend and other in-depth OHI analysis.

Table 1. New Jersey Employment Demographics, 2009-2010

Demographics	2009	2010
Percentage of civilian workforce unemployed	9.1	9.3
Percentage of civilian employment self-employed	5.2	4.6
Percentage of civilian employment in part-time jobs	17.7	17.0
Percentage of civilian employment by number of hours worked		
<40 hours	35.5	32.7
40 hours	43.3	46.6
41+ hours	21.2	20.6
Percentage of civilian employment by sex		
Males	52.9	53.2
Females	47.1	46.8
Percentage of civilian employment by age group		
16 to 17	0.8	0.9
18 to 64	94.2	93.6
65+	5.1	5.5
Percentage of civilian employment by race/ethnicity		
White	78.1	77.5
Black	12.2	12.5
Hispanic origin	17.4	18.7
Other	9.7	10.0

Source: NJ Department of Labor and Workforce Development

Table 2. Selected 2009 and 2010 New Jersey Occupational Health Indicators

Occupational Health Indicator	2009	2010
Annual average # of adults (civilian non-institutionalized) working in NJ ¹	4,138,000	4,100,000
Estimated annual total number of work-related injuries and illnesses ²	87,400	82,500
Annual number of work-related traumatic fatalities ¹	99	81
Annual number of work-related hospitalizations	4,355	4,249

Sources: ¹National Bureau of Labor Statistics, ²NJ Department of Labor and Workforce Development

Project Evaluation

Utilizing the results from the data analyses, staff evaluated the hospital discharge (HD) and Emergency Department (ED) data sources and the OHI data systems to ensure that the surveillance system operates efficiently and that the systems are serving a useful public health function and meeting stated objectives. Upon evaluating outliers and surveillance years with state rates exceeding US rates, errors in data entry and extraction of HD and ED data were found. As a result, new SAS codes were developed to facilitate the retrieval of NJ HD and ED data in a more efficient and accurate manner. Revised figures were submitted to NIOSH.

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Brief Overview

Occupational exposure to respirable crystalline silica (RCS) is a serious but preventable health hazard. Exposure to RCS occurs in construction, mining, manufacturing and other industries, and can result in silicosis and other lung diseases. The overall goals of the New Jersey Department of Health's (NJDOH) Silicosis Surveillance Project are to: identify potential cases of silicosis; classify cases in accordance with established case confirmation criteria; evaluate exposures associated with the cases; identify new industries, occupations, and causes associated with this condition; and implement interventions to prevent silicosis in New Jersey.

Highlights from Analysis of Silicosis database

The OHS Unit processed 33 potential silicosis reports this year, resulting in confirmation of seven newly identified cases of silicosis. This latest case data was submitted to NIOSH. The seven new silicosis cases were distributed among the major industrial sectors consistently associated with silicosis in NJ: construction (4 cases), manufacturing (2 cases), and mining (1 case). These results continue the trend of increasing numbers of silicosis cases in the construction industry. Two of the construction cases were in their early 50's at the time of case confirmation. This supports the continued need for NJ to maintain our efforts to improve the development and use of silica control measures in the construction industry, while at the same time, monitoring the manufacturing and mining sectors for multiple case sites and emerging trends.

Major Accomplishments/ Outcomes

NJ Silica Outreach and Research (SOAR) Alliance

The OHS Unit is a member of the NJ SOAR Alliance, a multiple-partner team consisting of representatives from industry, labor and state and federal agencies. Historically, the SOAR Alliance has been successful in identifying many practical control measures to reduce silica exposures during construction activities. Over the past year, the OHS Unit organized and hosted three teleconferences of the NJ SOAR Alliance. Efforts of the group included: seeking field testing sites for NIOSH to evaluate new dust controls on dowel drills, reviewing findings of NIOSH controlled studies on silica exposures associated with fiber cement siding and asphalt milling machines, identifying interesting OSHA silica inspections, and partnering with NJ SOAR Alliance members to plan webcasts that focus on effective hazard controls for these industries. OHS Unit staff presented newly analyzed silicosis surveillance data to the group, including the following presentations:

- “Occupations of NJ Silicosis Cases in the Construction Industry, 1979-2011.” Presented at: NJ Silicosis Outreach and Research Alliance Teleconference, October 2012.
- “Tracking Silicosis in the NJ Mining Industry, 1979-2011.” Presented at: NJ Silicosis Outreach and Research Alliance Teleconference, April 2013.

A key collaborative effort of the NJ SOAR Alliance centered on working closely with the Center for Construction Research and Training (CPWR) during the development and pilot-testing of their new "Work Safely with Silica" website, a one-stop source of information on how to prevent a silica hazard and protect workers. The OHS Unit along with other NJ SOAR Alliance members provided resources including pictures, reviewed drafts, pilot-tested the site, and provided feedback. In January 2013, the CPWR "Work Safely with Silica" website went live [<http://www.silica-safe.org/>].

Emerging Silicosis Hazard Investigated by NJDOH OHS Unit, NIOSH, and Other Silicosis Surveillance States
OHS Unit staff participated in the annual NIOSH/State Occupational Lung Surveillance Meeting in Oakland, CA in April 2013. Conference attendees included two representatives from NIOSH, one from federal OSHA and four from lung disease surveillance states. NJDOH staff introduced discussion about a potential emerging US silica hazard and possible new data source for occupational lung disease surveillance. The discussion centered around a 2012 journal article describing the occurrence of 25 cases of silicosis in Israel over a period of 13 years, all related to the fabrication of a relatively new artificial stone countertop product that contains over 90% quartz. (The primary source of silica is quartz; natural stone countertop products contain 40-60% quartz.) The cases were advanced enough to be evaluated for lung transplantation and that is how the cluster of cases was recognized. Because production of these new artificial stone materials is rapidly expanding all over the world, and the products are both manufactured and fabricated and installed here in the U.S., the need to investigate this hazard was recognized. OHS Unit staff gathered background information, identified existing hazard control efforts on the part of manufacturers and the stone fabrication industry and shared this information with state partners and NIOSH. The group is also investigating opportunities to use the U.S. Organ Procurement and Transplantation Network Database as a new source of potential silicosis cases.

Major Outputs/Products

Silicosis Surveillance Data Incorporated into Worker Training

A key intermediate outcome was the development of presentation-ready slides describing the occupations of construction cases identified in the NJDOH Silicosis Registry. These slides were developed at the request of union trainers on the NJ Silicosis Outreach and Research Alliance to use in existing silicosis training curriculum. The slides described the occupations of construction workers with silicosis along with the duration of exposure and age when silicosis was recognized.

Similar slides were completed for mining and provided to the NJ Department of Labor and Workforce Development Mine Safety Compliance Unit. The Mine Safety and Health Administration (MSHA) funds a full-time position to provide educational training to NJ mines. This individual conducts the "New Miner and Refresher Training" to all the active mines throughout the state of New Jersey. These slides were requested after OHS Unit staff presented mining-specific data about silicosis to a class of new miners. This was part of an educational outreach to the NJ mining industry (see following section), coordinated by the NJDOH with the input from federal, state and industry representatives.

Dissemination of Latest Silicosis Statistics and Dust Control Measures Information to NJ Mines

From 1979-2011, mining was the second leading industry sector associated with silicosis cases in New Jersey. This year, the OHS Unit completed its planned educational outreach to 69 active surface mines in the state. All

materials that were distributed, as well as the supporting statistics can be found on the new “Silicosis in Mining” webpage [<http://www.nj.gov/health/silicosis/mining/index.shtml>].

For this effort, the OHS Unit collaborated with the National Institute for Occupational Safety and Health’s (NIOSH) Office of Mine Safety and Health Research. NIOSH personnel analyzed raw data from the Mine Safety and Health Administration (MSHA) to identify current NJ mine operators, locations, numbers of employees and injury/illness statistics. NIOSH also provided hard copies of two new publications describing best practices for dust control in surface mines. The OHS Unit analyzed its silicosis surveillance data for the mining industry collected over the past 32 years and developed a fact sheet that described the following: number of cases, types of mines where cases were exposed, the occupations of cases at the time of exposure. Also included was the list of mining occupations found to be overexposed to airborne crystalline silica dust in the past 10 years by MSHA inspectors. Comments and input on the mailing were provided by the following stakeholders: the Northeastern Office of MSHA, the NJ Department of Labor and Workforce Development Occupational Safety Training and Mining Groups, and the New Jersey Aggregates Safety Council. The NJ fact sheet and NIOSH best practices publications, along with the new joint NIOSH/OSHA Alert on Worker Exposure to Silica during Hydraulic Fracturing were mailed to mine operators in April 2013. The evaluation of this outreach effort is in progress.

Report of 30+ Years of Silicosis Surveillance in New Jersey

New Jersey is one of only two states currently conducting silicosis surveillance in the United States. Analysis of this important information spanning 32 years was completed this year and is being prepared for dissemination. Analysis includes trends in: numbers of cases, reporting source, gender, age, race, ethnicity, industry sector, occupation and first year and duration of exposure. Once the report is finalized it will be disseminated to partners and stakeholders.

Potential Outcomes/Outputs

- Continue to work closely with NIOSH and silicosis surveillance states to evaluate the hazards posed by fabrication of artificial stone products and provide information about best practices for controlling dust to fabrication shop owners and employees.
- Collaborate with the NJ SOAR Alliance and OSHA Region 2 and pursue opportunities to produce a webinar targeting silica hazards and controls in the construction-related area of natural and artificial stone countertop fabrication/installation.
- Explore collaborations with advocacy organizations representing Hispanic workers to identify opportunities to provide training and informational materials to this community.

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Brief Overview

The NJ Work-Related Asthma (WRA) Surveillance project identifies potential cases of WRA; classifies cases in accordance with established case confirmation criteria; evaluates exposures associated with the cases; identifies new industries, occupations and causes associated with this condition; and implements interventions to prevent WRA in New Jersey.

Highlights from Analysis of WRA Database

Sixty-one new cases of WRA were confirmed for 2009. Of these cases 32 (61%) were female; 38 (62%) were white; 10 (16%) were of Hispanic origin; and 23 (38%) ranged in age from 35-49 years. Over 40% of these cases were classified as Occupational Asthma (Table 1). The greatest number of cases was among those that worked in the General Medical and Surgical Hospitals industry, 6 (10%). Occupations with the highest number of confirmed WRA cases were Healthcare Practitioners, 7 (14%), and Technical and Office and Administrative Support, 7 (14%). The agents that were most commonly associated with confirmed cases of WRA were indoor air pollutants, 12 (20%); halogens, 6 (10%); mineral and inorganic dusts, 5 (8%); and solvents, 4 (7%). A total of 533 confirmed cases of WRA have been identified from 1993-2009 and submitted to the Data Coordination Center of the Consortium of State-based Surveillance.

Classification of Confirmed WRA Cases in New Jersey, 2009

Classification	No.	%
Occupational asthma	28	44.5
Reactive airways dysfunction syndrome (RADS)	22	38.9
Work-aggravated asthma	8	13.0
Insufficient data to classify	3	3.7
Total	61	100

Major Accomplishments/ Outcomes

Industrial Hygiene Visit/Consultations

An Industrial hygiene consultation was provided for a child-care center following exposure to a bleach/acid mixture that resulted in WRA. A follow-up report is being drafted, which includes recommendations on Green Cleaning. In the interim, five material safety data sheets on cleaning products were sent.

An Industrial hygiene consultation was conducted at an acute-care hospital after an employee developed WRA due to exposure to pepper spray (capsaicin). Recommendations to control workers' exposures to pepper spray, particularly in an emergency response situation, using OSHA's First Responder Operations Level of the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard was sent to the hospital. Since the consultation, the hospital has indicated they have implemented most of the recommendations.

Medical Examiners (Formaldehyde and WRA)

Formaldehyde is a known irritant and has resulted in WRA. The OHS Unit, in collaboration with the Public Employees' Occupational Safety & Health Unit, distributed educational packets to Medical Examiners addressing the development of WRA due to formaldehyde exposure. The packet included recommendations regarding personal protective equipment, respiratory protection and hazard communication training for use

by medical examiners. This outreach was initiated following the completion of industrial hygiene walkthroughs at five medical examiner facilities in NJ.

14th Annual American College of Chest Physicians (ACCP) Community Asthma and Chronic Obstructive Pulmonary Disease (COPD) Coalitions Symposium

The OHS Unit was awarded a travel scholarship and presented a poster on the NJDOH WRA Surveillance System in Atlanta, Georgia. Approximately 50 people were in attendance, not including the health providers also in attendance.

NJDOH Asthma Publication to Be Featured in Respiratory Disorders Resource

The editor of a library reference book publisher (Omnigraphics) has requested permission to reprint NJDOH's "Do You Have Work-Related Asthma?" patient brochure in the upcoming edition of their Respiratory Disorders Sourcebook. The Sourcebook provides up-to-date information about infectious, inflammatory, occupational, and other types of respiratory disorders, including influenza, pneumonia, asthma, chronic obstructive pulmonary disease, and lung cancer.

Major Outputs/Products

Educational Outreach - Health Alerts/Bulletins

The OHS Unit developed a health alert bulletin in response to health concerns among emergency medical services (EMS) personnel following exposure to a fogging disinfectant used for ambulance cleaning. To date, four emergency medical technicians (EMTs) have been confirmed with work-related asthma. The alert entitled "Fogging Ambulances with Toxic Disinfectant May Cause Illness" provides guidelines for personnel involved in the cleaning and disinfection of EMS equipment and transport vehicles and was reviewed by the NJDOH Office of Emergency Services. The alert was disseminated via the NJDOH Health Alert Network to over 800 EMS agencies in New Jersey and is posted on the NJDOH WRA website

[http://nj.gov/health/eoh/survweb/wra/documents/ems_fogging_alert.pdf]. An evaluation of this outreach effort is in progress.

The OHS Unit developed a fact sheet entitled "Don't Get Sick When Applying Pool Chemicals" after confirming a case of WRA in a lifeguard available at

[<http://nj.gov/health/eoh/survweb/wra/documents/poolchemicals.pdf>]. The fact sheet describes safe manual application of chlorine to pools during adjustment of pH and chlorine levels and was vetted to the NJDOH Public Health Sanitation and Safety Program which enforces NJ regulations on recreational bathing. The fact sheet was mailed along with a survey questionnaire to approximately 682 indoor pool operators and 100 local health departments in New Jersey. Important preliminary findings include the following (n=123):

- 95 (77%) reported manually adjusting pH and chlorine levels using a chlorine-based product
- 81 (66%) wore personal protective equipment
- 92 (75%) were provided education and training
- 13 (11%) learned new information about respiratory hazards associated with this process
- 3 (2%) had employees who reported respiratory symptoms

The fact was featured in the January 2013 edition of NIOSH eNews

[<http://www.cdc.gov/niosh/enews/enewsV10N9.html#news>].

Asthma in Workers Exposed to Diisocyanates

The OHS Unit is the lead author on a NIOSH/state partner peer-reviewed article “Diisocyanates and WRA: Findings from 1993-2008”. The manuscript will be submitted to the *Journal of Environmental and Occupational Medicine* following technical review by NIOSH and OSHA. A poster summarizing research findings was presented at the 2013 Isocyanates and Health Conference in Potomac, MD.

WRA Chapter in the NJDOH “Asthma in New Jersey Report”

The OHS Unit collaborated with the NJDOH Division of Family Health Services/Asthma Awareness and Education Program and submitted revisions to the WRA Chapter of the latest edition of the “Asthma in New Jersey report.” [<http://www.state.nj.us/health/fhs/asthma/documents/chapter2.pdf>]

Pediatric/Adult Asthma Coalition of New Jersey (PACNJ)

The OHS Unit is a member of PACNJ, a multi-partner team of health care professionals and organizations whose primary goal is to provide resources to schools, child care providers, health care providers, and other stakeholders to prevent and manage asthma. PACNJ is sponsored by the American Lung Association in New Jersey. The OHS Unit exhibited at the 2012 Asthma Symposium for 130 health care providers; trained 60 school nurses and 200 facility workers about reducing asthma triggers in schools [http://www.nj.gov/health/peosh/documents/iaq_nurse_2.pdf]; and participated in the School Task Force.

National Asthma Awareness Month

The OHS Unit contributed to this national initiative by sending an updated educational outreach letter via local health departments, medical associations/practices, and physicians listed in the WRA database to 115 physicians. The letter was also sent to local medical associations/practice sand physicians who have reported WRA cases to the NJDOH in the past. In addition, an article entitled “Prevent Work-Related Asthma” was published in the 2013 April issue of the NJDOH online newsletter “Health Matters” [http://www.state.nj.us/health/newsletter/documents/apr_2013_newsletter.pdf].

Potential Outcomes/Outputs

Child Care Workers Pilot Study/Green Cleaning Initiative

Cleaning agents are a known asthmagen among child care workers. In an effort to provide educational outreach, with an emphasis on Green Cleaning, a pilot-study for child care workers has been re-initiated with a local child care provider to collect information on the facilities current cleaning practices and on cleaning agents used. This provider has approximately 6 locations in NJ, with over 100 employees. The OHS Unit has completed the first draft of a survey that will be administered to the employees at each location.

Hair Stylists/Cosmetologists (Brazilian Blow Out) Health Advisory

The OHS Unit has completed the first draft of a health advisory targeting beauty salon owners and workers regarding the hazards associated with hair straightener products containing formaldehyde. There are more than 9,000 shops and 30 licensed schools in the state. The advisory will be reviewed by the NJ State Board of Cosmetology & Hairstyling, potentially distributed (along with hair products) by one of the largest distributors of hair products in the state and included in the Board’s fall newsletter for cosmetology schools.

National Occupational Research Agenda (NORA) Cleaning and Disinfecting Working Group

OHS staff will continue to be a member and participate in this working group.

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Brief Overview

The overall goal of the New Jersey Fatality Assessment and Control Evaluation (NJ FACE) project is to maintain and expand a surveillance system for identifying work-related fatal injuries in New Jersey. FACE researchers seek to prevent work-related fatal injuries by identifying and investigating work situations at high risk for injury, and then formulating and disseminating prevention strategies to those who can intervene in the workplace.

Highlights from Analysis of NJ FACE database

- In 2012 there were 77 work-related fatalities. Of these, 74 (96%) were male; 56 (72%) were white; 5 (13%) were of Hispanic origin; and the average age was 46. Agriculture, forestry, and fishing had the greatest number of fatalities. The annual crude fatality rate decreased from 2011 (2.74 per 100,000 full-time employees) to 2012 (1.98 per 100,000 full-time employees).
- To identify risk factors of fatalities, Emergency Department (ED) and Hospital Discharge (HD) data were used to obtain frequencies of non-fatal occupational injuries and estimate annual incidence rates for 2010. Work-related cases from both the ED and HD datasets from specific E-codes were used to calculate non-fatal incidence rates for nine categories.
- Struck-by falling objects (118 per 100,000 workers; 95% CI 104-135), fall related injuries (97 per 100,000 workers; 95% CI 85-110), and motor vehicle injuries (60 per 100,000 workers; 95% CI 52-68) were the three leading non-fatal injuries.

Major Accomplishments/ Outcomes

Falls in NJ Residential Construction

A pilot study was conducted to determine barriers to the use of fall protection in small residential construction companies in the state of New Jersey. Staff organized three focus groups with local labor organizations: The Laborers' International Union of North America, NJ Local 55 (residential construction); New Labor in Newark, NJ; and New Labor in Lakewood, NJ. During each focus group a questionnaire was administered to collect data on demographic factors, usage of fall protection equipment, and to assess knowledge, attitudes and behaviors about workplace safety. An update of this project was submitted to the CDC-OSHA Fall Prevention Campaign.

Important preliminary findings include the following (n=36):

1. Approximately 50% of participants who were union members received training on fall protection; while only 38% of non-union members received training.
2. 56% of workers surveyed responded that they have been in situations where they did not use fall protection equipment, even though it was provided. Reasons for not using fall protection equipment:
 - Most times, the employer is not providing equipment
 - Workers' perception that if they ask for equipment, they would get fired
 - Lack of communication between workers and employer
 - Workers feel uncomfortable wearing equipment

Major Outputs/Products (in progress)

Committee for the Advancement of Arboriculture

NJ FACE staff presented an overview of the FACE project at the NJ Certified Arborists', NJ Chapter International Society of Arboriculture's Committee meeting. Three of the victims who died in the aftermath of Hurricane Sandy were working for landscaping and tree care companies. The Committee is currently reviewing the OHS Unit's updated Tree and Wood Chipper Hazard Alert, which includes hazard awareness and recommendations regarding post-storm cleanup. The committee has agreed to disseminate educational materials and encourage the organizations over 600 members to participate in an evaluation of the educational material.

NJ FACE Adult School Crossing Guard Project

NJ FACE staff, continue to serve as members of the Crossing Guard Working Group Meeting, in which key stakeholders address the health and safety needs of crossing guards and develop a standardized, state-wide training programs. The NJ FACE Crossing Guard Web site has been listed as a resource on Safe Routes to School's Crossing guard Web site.¹

New Educational Resources to Target New Jersey Solid Waste Industry

The NJ FACE Hazard Alert, "Solid Waste Workers Killed on the Job" has been updated to include latest statistics, additional recommendations and case examples. This alert was reviewed and endorsed by NIOSH, NJ Department of Labor and Workforce Development, the National Solid Wastes Management Association and the Solid Waste Association of North America. The alert will be mailed to all DPW's and private haulers in NJ and will include a survey for haulers to complete that will collect information on their practices and the usefulness of the alert.

Updated NJFACE Website

A dedicated NJFACE website has been developed which includes Hazard Alerts, relevant FACE investigation reports from all states and NIOSH, and additional resources. This website will be launched upon approval from the NJDOH's Office of the Commissioner.

Digital Story: Auto Repair Worker Outreach

Since 2003, seven mechanics have died in NJ from crushing injuries while working underneath a vehicle/machine that fell unexpectedly. NJ FACE staff are developing a digital story addressing the hazards of this work. The video storyboard/script is completed and was vetted to a field expert for subject matter review. The video will include case studies, statistics on fatal and nonfatal injuries, recommendations and standards regarding equipment and best work practices. The NJ State Motor Pool approved the video content and agreed to allow filming at a garage in Trenton, NJ. NJ FACE is collaborating with a College of New Jersey Associate Professor who has agreed to assist in the filming and production.

¹ NJ Safe Routes to School's Resource Page.

Available at: <http://www.saferoutesnj.org/resources/gettingstarted/crossing-guards/>

Fatality Investigations initiated or completed in Federal Fiscal Year 2013

- 12-NJ-10- Machine-related: A laborer was crushed when the bucket and arms of the skid-steer loader he was working underneath dropped down.
- 12-NJ-19-Struck-by: A ground worker for a landscaping company was struck by a large falling branch that had just been cut by another worker at the top of the tree.
- 12-NJ-21-Struck-by: A laborer for a landscaping company was struck by a swinging slab of concrete that had been hoisted. He and coworkers were trying to grade the ground underneath the slab.
- 12-NJ-24- Machine-related: A mechanic was crushed when the 3-ton wood-chipping machine that he was working underneath fell on top of him.
- 12-NJ-78 -Struck-by: A tree surgeon for a landscaping company was struck-by one of the logs that he was cutting attached to a storm damaged tree.
- 12-NJ-86- Fall: A roofer was rolling out roofing material in the proximity of a skylight when he tripped and fell backwards, through the skylight, 20 feet to the floor below.
- 13-NJ-20- Fall: A laborer fell approximately 40' to the concrete below while clearing stones from a flat roof when he stepped on a portion of the roof that gave way.

Project Evaluation

A new logic model was developed to determine changes in procedures necessary to increase programmatic impact.

